CX-1A / CX-1B Manual

Version 1.2

Lambda Labs
professional acoustics

LAMBDA LABS

Contents

NOTES:

1. Safety

1.1. General safety information

This manual contains essential information on product safety, installation and usage. Read this manual carefully in order to become familiar with the operation and usage of the product/s. Read this manual carefully BEFORE operating the product/s for the first time! Read the IMPORTANT GENERAL SAFETY REGULATIONS you can find on the next pages!

- Keep this manual within reach while operating the product/s all the time!

- As a Lambda Labs products rental partner, always attach the appropriate user manuals to the devices. Should you need additional printed manuals, please order them from Lambda Labs or download a latest version!

- When reselling the product/s, hand over the manual to the new owner and provide written documentation about any changes of the system which may have been applied!

- Always use the latest manual edition! Check our website regularly for updates!

While all information in this manual has been prepared to the best knowledge and with the utmost care, Lambda Labs can not guarantee the accuracy of the documentation in all cases. Lambda Labs disclaims any liability for any errors or omissions that may be inferred from this manual or the products described therein. This does not apply to intent and gross negligence. Technical specifications, as well as dimensions, weight and properties do not constitute guaranteed characteristics. Lambda Labs expressly reserves the right to make changes and modifications in accordance with statutory provisions and to improve product features.

1.2. Declaration of Symbols and Illustrations of this Manual

In order to point out potential sources of danger and application errors, the following symbols and illustrations are used in this manual:

⚠ DANGER!	**DANGER:** The warning symbol "DANGER" indicates that non-observance may pose a danger to the operator or to other persons in close range and the loudspeaker product!
⚠ CAUTION!	**CAUTION:** The warning symbol "CAUTION" requires the operator to take particular precautions to prevent possible damage to the loudspeaker product!

⚠️ ATTENTION!	**ATTENTION:** The warning symbol "ATTENTION" indicates that a special attention should be given to certain setup activities or applications!
💡	**NOTE:** This illustration notifies the operator about hints and help to simplify and to accelerate the use of the loudspeaker, the setup process or to better understand some contexts.

1.3. IMPORTANT GENERAL SAFETY REGULATIONS

⚠️ DANGER!	**Safe stand on suitable underground !** Always ensure a good stability of the loudspeaker, especially when using it with loudspeaker stands. When placing the loudspeaker on the ground or platforms, make sure the area is even and capable to carry the total load! Secure the loudspeaker with straps to the ground or suitable platforms!
⚠️ DANGER!	**High sound pressure levels!** Loudspeakers are capable to deliver dangerously high sound pressure levels and can cause permanent hearing loss. Always pay close attention to the SPL levels when using a sound reinforcement product or system! Always adhere to the corresponding statutory provisions and safety regulations.
⚠️ DANGER!	**Qualified operators!** The operation as well as the planning of the setup may only be carried out by qualified personnel who are familiar and experienced with the instructions and the implementation of the operating procedures!
⚠️ DANGER!	**Work safety!** 🔵 🔵 🔵 🔵 In order to avoid accidents, it is the responsibility of the operator and the contractor to ensure that the local accident prevention regulations are always fulfilled. During the set up process of the loudspeaker and especially the entire rigging process, the operators should always wear head and foot protection, hand protection and possibly ear protection! Never climb on stacked or flown loudspeakers!
⚠️ DANGER!	**Speaker rigging!** As Lambda Labs loudspeakers can be flown in various ways, always refer strictly to the given rigging operations and its related safety regulations of the provided rigging manuals! In the case of any doubt, recheck your setup and/or get in contact with the Lambda Labs support! This manual describes only a few rigging setup examples and opportunities from the possible variations. For further instructions, refer to the specific rigging manual of the rigging fixture you like to use.

DANGER!	**Local safety regulations!** Other safety regulations may apply in different countries. If changes occur, get to know the local regulations and if necessary, adapt them to the respective loudspeaker setup. It is the duty and responsibility of the operator to carry out any ground setup and any flown installation in accordance with the local regulations!
DANGER!	**Inspection of electrical items & rigging components!** Check ALL involved electrical devices such as cables, Powercon sockets and ALL rigging components which are involved in the rigging process of the loudspeaker before every use! Even with the slightest doubts about the function and safety of any components, these should not be used! This manual describes only a few rigging setup examples from the possible variations. For further instructions, refer to the specific rigging manual of the rigging product you like to use.
DANGER!	**Flown loudspeakers!** When lifting a loudspeaker to make it a flown system, the lifting area of the speaker/ cluster must be secured and cleared! Standing under the loudspeaker when being raised, is strictly forbidden! Never leave the loudspeaker unattended during the entire installation process. Always keep watching all rigging components and connection joints during the uplifting procedure! Stop the uplifting procedure if any uncertainty occurs! Lambda Labs recommends to always use a second and independent safety link to upper located suspension points after the setup is ready.
DANGER!	**Dynamic Load (Wind Load)!** Lambda Labs does not recommend the use of Lambda Labs loudspeakers with wind forces greater than 6 bft (12.3 m / s, 44 km / h,). If the wind force exceeds 8 bft ((17.8 m / s, 62 km / h), clear the loudspeaker area, bring down the loudspeakers and secure them!
DANGER!	**Setup environment!** Keep the device dry and avoid the contact to heavy dust, sand and prolonged exposure to intense sunlight or strong vibrations and impact.For safety reasons, it is not allowed to place any liquid containers on or near to the enclosure.
DANGER!	**Placement & interaction with other devices!** The device should not be placed near any heat producing sources or exposed to extremely high temperatures or below zero degrees Celsius. Sufficient ventilation should be provided when operating the loudspeakers!
DANGER!	**Setup area protection!** When setting up a system with stacked or flown loudspeaker arrays, secure the entire work area with crowd control barriers. Make sure that the secured area is sufficiently large in proportion to the height of the stack!

DANGER!	**Cabling!** Lay down all cables with care. Additionally, secure the cables with duct tape or cable bridges and mark them for safety reasons. Do not place anything on the cables of the device. Use intact power cords only! The use of power cables and power distributions with insulated or missing protective earth conductor (PE) is strictly forbidden!
DANGER!	**Power line!** Always ensure, that the power line is sufficient, stable and safe.
DANGER!	**Invisible damages!** In the event of a potential damage of a loudspeaker by falling down from a height or being involved in a transportation accident, it is mandatory to check the loudspeaker for mechanical stability and rigging safety.
DANGER!	**Maintenance!** Please refer to Chapter **2.3** „Maintenance". If any damage or failure occurs to the loudspeaker itself or the integrated rigging system, please contact the Lambda Labs technical support and wait for further instructions! Do NOT repair or exchange speaker parts or rigging components by yourself and without support of a qualified service personnel!
DANGER!	**Manual!** Keep this manual within easy reach for operating the product/s all the time! As a Lambda Labs products rental partner, always attach the appropriate user manuals to the devices. Should you need further manuals, please order them from Lambda Labs or download a current copy! If you resell the loudspeaker, hand over the manual to the next operator and provide written records about any changes of the device which may have been applied! Check our website regularly for updates in order to use always and only the latest manual version!
CAUTION!	**Storing!** Store the devices in a dry, cool and clean environment!
	Shipping Keep the packaging of the devices in order to send them in original packaging in case of damage. This minimizes the risk of possible transport damage.

1.4. EC declaration and conformity

Lambda Labs
Austria

Declares that the following products:
CX-1A / CX-1B
„EPS" Express Pin System

Are in conformity with the provisions of:
Machinery Directive 2006/42/EC
2011/65/EU, RoHS

To guarantee the safety of the components, the following standards and rules have been complied:
EN ISO 12100-1: 2011 (Mechanical Safety)
DIN 18800 (Mechanical Structure)
BGV-C1 / DGUV Regulation 17 & 18 (Mechanical Standard applied in Germany)

$$C\hspace{-0.2em}\Epsilon$$

Graz, 17/02/2020

Steffen Kroschel, Chief Technology Officer (CTO)

WEEE Declaration (Disposal)
Electrical and electronic devices must be disposed of separately from household or municipal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions regarding the disposal of this product, please contact Lambda Labs.

2. The CX-1A

2.1. Technical data overview

System	High power 2-way coaxial monitor
Configuration	True Point Source 1 x 8" high excursion 2" VC driver 1 x HF-compression driver with 1.7" VC polyamide diaphragm
Electronics	800W + 200W RMS amplifier power
Signal Processor	24bit ADC/DAC, 48kHz sample rate
Frequency Response	80 – 20,000Hz (+/- 3dB)
Coverage Angle	100° horizontal x 100° vertical
Monitor Angle	35°
Crossover Frequency	2000Hz
Sensitivity	94dB / 1W / 1m
Connection	XLR in / out, Powercon in / out
Enclosure	Rigid, braced construction of special 12mm lightweight-plywood
Finish	High density black polyurethane-coating (Other colours on request)
Front Cover	Weather-resistant front fabric on coated 1.5mm perforated steel
Width	12.6" (320 mm) / CX-1B 11.8" (300mm)
Height	14.8" (376 mm)
Depth	10.2" (258 mm)
Weight	18.5 lbs (8.4 kg) / CX-1B 15.9 lbs (7.2 kg)

2.2. General Components & CX-1B use

2.2 Figure 1: CX-1A/CX-1B Front Side
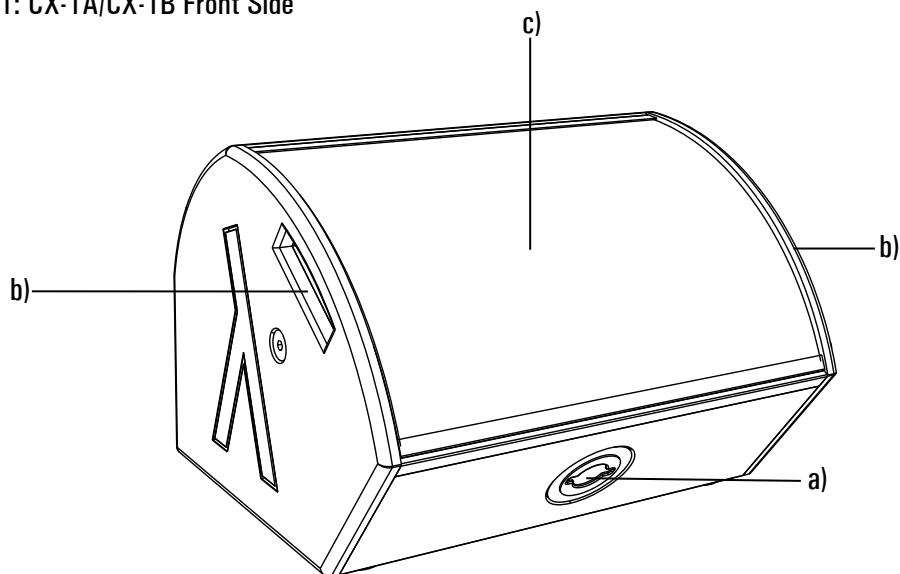
PART	DESCRIPTION of 2.2 Figure 1	REFERENCE
a)	**„EPS" (Express Pin System) Rigging Points** The CX-1A is equipped with 1 EPS Rigging Point to fly the loudspeaker with various rigging equipment. Therefore, the loudspeaker can be flown vertically, horizontally and upside down. Refer to Chapter **2.2.4** as well.	Chapter **2.2.4**
b)	**Handle** Recessed handles are located in both side plates of the cabinet to carry and move the loudspeaker.	–
c)	**Front Cover** The drivers are protected by a perforated steel grill. Additionally, a weather resistant fabric on the grill protects the drivers from dust and rain. The fabric is acoustically transparent.	–

2.2 Figure 2: CX-1A Back & Bottom Side
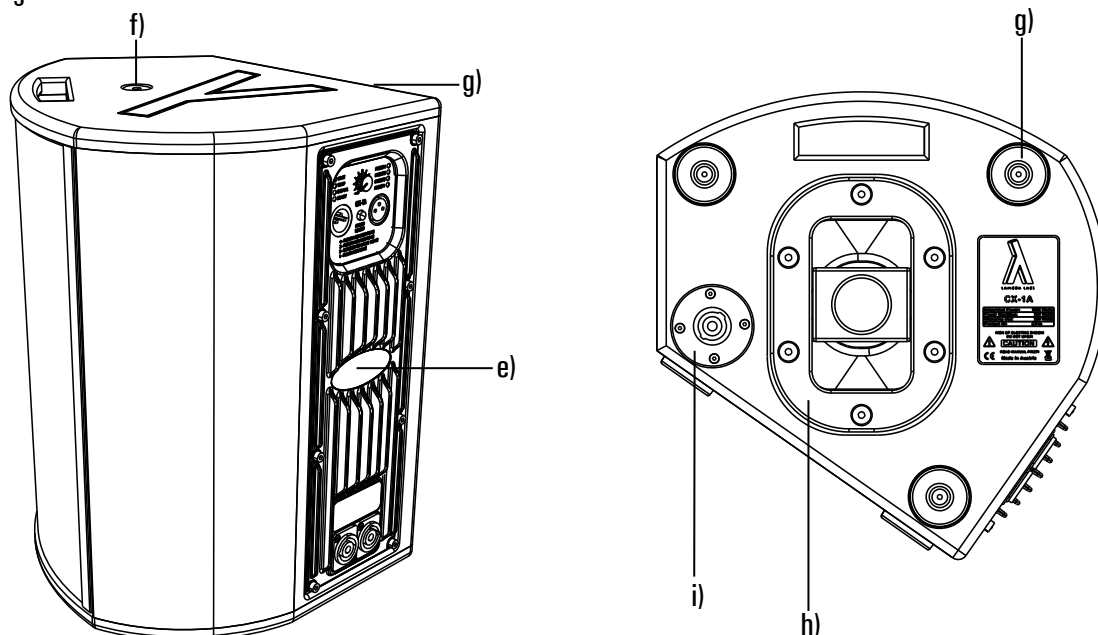
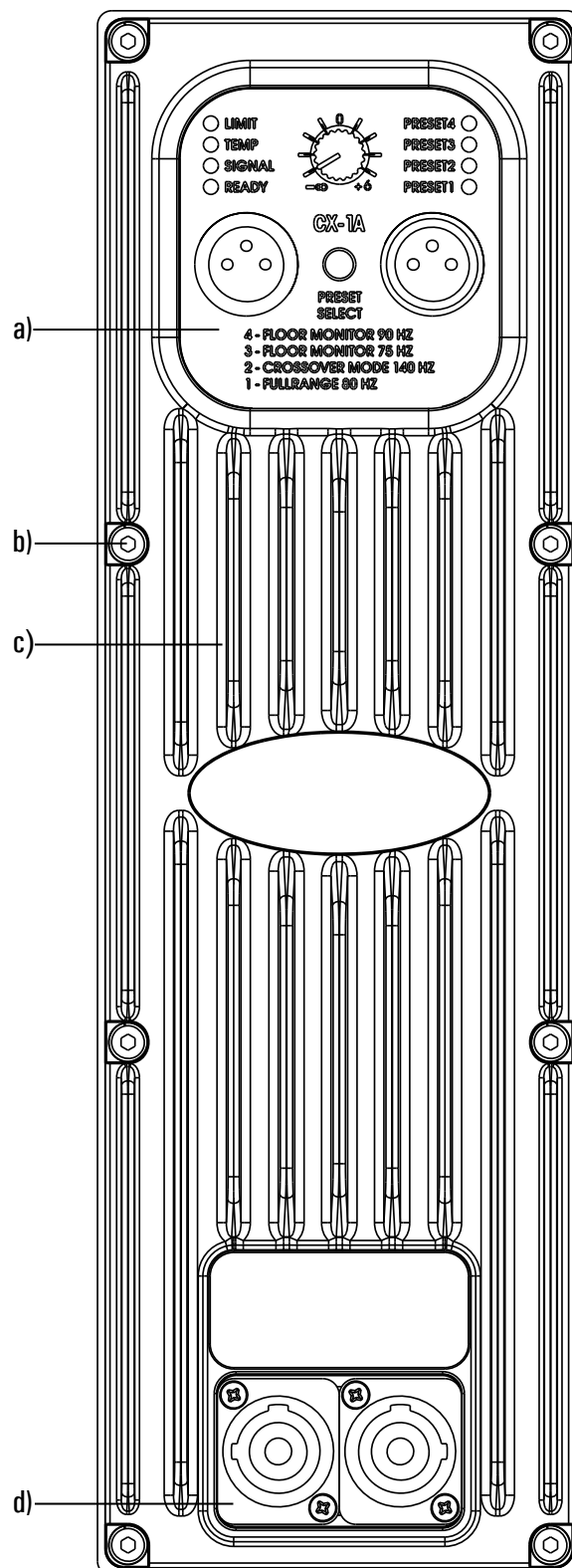| PART	DESCRIPTION of 2.2 Figure 2	REFERENCE
e)	**Amplifier Module** The built in bi-amp module delivers 800W plus 200W RMS power. It comes with 4 ready to use presets to match the various loudspeaker setups and the use of further products like additional subwoofers.	Chapter **2.2.1**
f)	**Second Independent Safety Link** By removing the dummy screw, an M10 ring eye can be inserted to safe the loudspeaker from accidently falling with a second independend safety link.	Chapter **2.2.3**
g)	**Rubber Feets** 7 rubber feets, attached to the loudspeaker`s bottom and monitor side, make the loudspeaker stand safely in both vertical and horizontal position.	_
h)	**Adjustable Speaker Flange** The loudspeaker can be tilted down- or upwards by adjusting the angle in 4.5° steps. The maximum possible tilt angle is +/- 13,5°. The stand adapter is suitable to use with a stand/distance rod tube diameter of 35mm. Lambda Labs recommends the use of products with the „Ring Lock" system.	Chapter **2.2.2**
i)	**Speakon Out** The CX-1A is able to additionally power up to 2 CX-1B loudspeakers to extend the reinforced area. The maximum power of 500W RMS for each CX-1A/B can be reached with one CX-1A combined with one CX-1B. Operating 2 CX-1B, each CX-1A/B get 400W RMS amping power. The CX-1B operates in bi-amped mode. Therefore, the speakon connector has to be wired with 4 poles.	
⚠ CAUTION!	**Caution:** Never connect more than two CX-1B on one CX-1A, because a critical low impedance will be reached for the active module. Furthermore 2 different CX-1A should not be connected with their speakon outputs in any case. Make sure that you never use a crossed cable, because this could lead to the damage of the high frequency unit.	

2.2.1. Amplifier Module & DSP

2.2.1 Figure 1: Front View Amplifier Module

| PART	DESCRIPTION of 2.2.1 Figure 1	REFERENCE
a)	**DSP Control Panel** The DSP Control Panel contains the XLR input and output to apply a signal, the gain control and the dial button to select the provided factory presets. LED displays gives you further information about a certain status of the amplifier module.	Chapter **2.2.1.1** Chapter **2.2.1.3** Chapter **2.2.1.4** Chapter **2.2.1.5** Chapter **2.2.1.6**
b)	**DIN 912 M4 Screws** To protect the control panel from unauthorized access, an optional module cover can be installed. To do this, the 4 upper M4 screws of the module must be removed.	Chapter **2.2.1.7**
c)	**Cooling Fins** The integrated amplifier module can develop excessive heat, which will be dissipated by the cooling fins. **DANGER: The outside of the amplifier module and the cooling fins can be very hot! Do not touch its surface during the operation of the speaker. Allow the unit to cool down before packing the speaker.**	_
d)	**Powercon Mains In&Out** Mains connection to power the amplifier module and to power further loudspeakers. **DANGER: Risk of electric shock! Use grounded mains only!**	Chapter **2.2.1.1**

	Danger: The amplifier module can develop excessive heat! Do NOT touch the surface of the amplifier module during and right after its operation! Allow the unit to cool down before packing the loudspeaker.
	Danger: RISK OF ELECTRIC SHOCK! Use grounded mains only! Use undamaged cables and connectors only! Do NOT insert anything other into the Powercon connectors than Powercon plugs! Keep the connectors away from water and excessive humidity!

2.2.1.1. Amplifier Modul & DSP: XLR Connectors

The amplifier module provides 2 pieces of balanced XLR connectors wired in parallel (linked) to apply a signal to the loudspeaker and to link the signal to further loudspeakers. The male XLR connector is located on the left side. The female XLR connector on the right side. The pin assignment of balanced XLR connectors can be seen here:
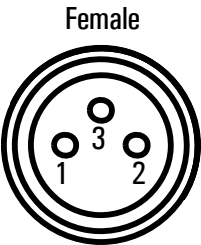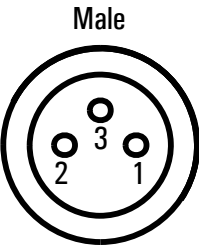
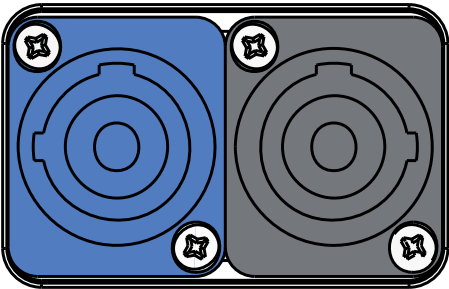| PIN	Assignment (Balanced)
1	Ground
2	Signal +
3	Signal -

	Caution: Pull by the plug rather than by the cord when disconnecting the XLR plugs!
	Caution: At the signal input of the active module, a maximum voltage of +/- 15Vpeak ($\sim$ + 22dbu) may be applied!

### 2.2.1.2. Amplifier Module & DSP: Powercon Mains

Mains connectors to power the amplifier module and to power further loudspeaker`s amplifier modules. The blue connector at the left side provides the mains supply. The grey Powercon connector at the right side provides the power supply link.

<table>
<tr><td>⚠ DANGER!</td><td>Danger: RISK OF ELECTRIC SHOCK! Use grounded mains only! Use undamaged cables and connectors only! Do NOT insert anything other into the Powercon connectors than Powercon plugs! Keep the connectors away from water and excessive humidity!</td></tr>
<tr><td>⚠ CAUTION!</td><td>Caution: The mains POWERCON connectors are not suitable for powering up or down the system and so should not be plugged or unplugged while under voltage! Always connect the POWERCON plug FIRST, THEN connect the Schuko plug (or other Standard 3 Pin Power Plug) to the AC power socket. Follow these steps in a reverse order to power down the system!</td></tr>
</table>

### 2.2.1.3. Amplifier Module & DSP: Gain Control

When the gain control is at its maximum position, the maximum input voltage before clipping is 5Vrms (+/- 7V peak). This value increases proportionally by turning back the gain control. In the 12 o'clock position, the input signal is reduced by 6dB. Therefore the maximum input voltage before clipping increases to 10Vrms (+/- 14V peak) accordingly. The Gain Control is located in the upper middle of the DSP Control Panel:
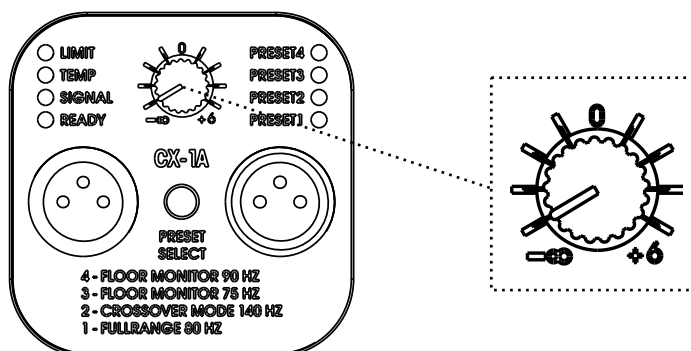
<table>
<tr><td>⚠ CAUTION!</td><td>Caution: +/-15Vpeak (~ +22dBu) at the input shouldn't to be exceeded under any circumstances!</td></tr>
</table>

2.2.1.4. Amplifier Module & DSP: Status Indicators

In the upper left corner of the Control Panel you will find 4 coloured signal LED displays as status indicators of the amplifier module. Their meanings are:
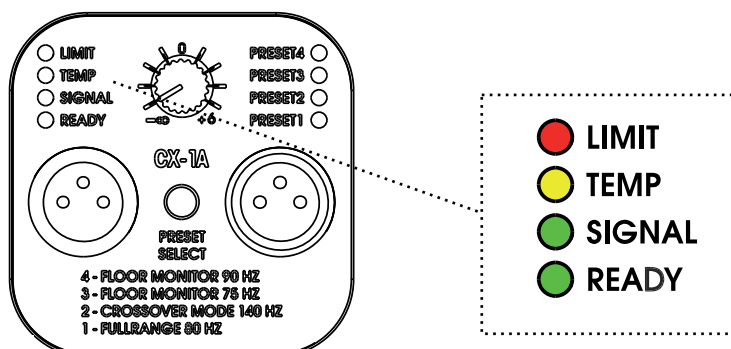
🔴 **LIMIT**

If the red **LED flashes**, one of the integrated limiters for the lowmid driver (distortion limiter, continuous output limiter, continuous current limiter, peak current limiter) is triggered. Together they serve to ensure sound quality and safe operation. Short flashing at high SPL output conditions is a completely normal and usual operational status.

Heavily flashing or even **continous light** means an overdriven signal chain which affects the sound quality. Extreme or permanet overdrive is hazardous for the low frequency driver, especially on high ambient temperature or with stationary use of sine signals with frequencies in the range of the loudspeakers minimal electrical impedance.

🟡 **TEMP**

The yellow LED is a temperature monitoring for the amplifier module and lite up under extreme conditions only.

A **slow flash** is an indicator for high temperature. This status is just for your information.

A **rapid flashing** will follow if the temperature rising further, and causes a reduction of the output level to lower the temperature to an uncritical level again. When playing music, this protective mechanism should only appear if the ambient temperature is very high and/or the equipment is exposed to direct sunlight.

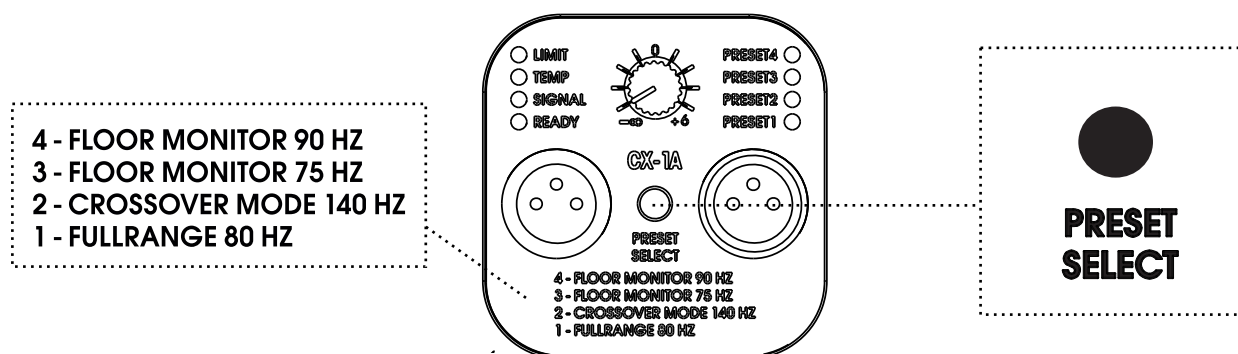A **continuous light** means a temporary muting of the output.

🟢 **SIGNAL**

The green signal LED illuminates permanently as soon as an input signal is detected. If it does not light up despite the connection to the output device, check the XLR cables and all peripheral connections. Make sure that the READY LED is also permanently lit.

🟢 **READY**

The green READY LED lights up permanently as soon as a stable power supply has been applied and the DSP Unit has been booted up completely.

2.2.1.5. Amplifier Module & DSP: Selecting Presets

The amplifier module has 4 pre-programmed factory-set presets. These are optimized for the particular speaker type and its possible applications. The presets can be selected by pushing the Preset Select button. After the preset has been loaded, the LED of the selected preset is illuminated permanently. The Preset Select button is located in the middle of the Control Panel. To make sure that the desired preset will be selected, the preset assignment list is printed on the lower part of the Control Panel:


```
4 - FLOOR MONITOR 90 HZ
3 - FLOOR MONITOR 75 HZ
2 - CROSSOVER MODE 140 HZ
1 - FULLRANGE 80 HZ
```

PRESET SELECT

2.2.1.6. Amplifier Module & DSP: Preset Assignment

Due to the complexity of the signal structure, a programming of the presets by the customer is not supported by Lambda Labs. The integrated setups already fulfill the demands of the most common applications. To allow for settings of EQ or delay, a controller can be inserted in the signal path to adapt the active speaker to every acoustical situation. For any questions about the presets, please contact the Lambda Labs support.

PRESET 1: Fullrange 80Hz

Preset 1 is intended for stand-alone operation. The low cut-off frequency is 80Hz (+/- 3dB).

PRESET 2: Crossover Mode 140Hz

Setup for the CX-1A to be used in combination with the MF-15A subwoofer is Preset 2. To match to the CX-1A, the MF-15A should be driven with Preset 3. If needed, a cardioid mode can be realized by using an additional MF-15A with the Preset 4. For further detailed information, please read the MF-15A manual.

The Crossover Mode 140Hz has a 24dB/oct. Linkwitz-Riley high pass filter at 140Hz. Accordingly, the subwoofer should have a 24dB/oct. Linkwitz-Riley low pass filter characteristic at 140Hz. The delay has to be adjusted in a way that both systems have matching phase responses in the crossover region. Especially in case of subwoofer systems which exhibits larger propagation delay (especially horn loaded systems) larger delay values have to be set.

PRESET 3: Floor Monitor 75Hz

The monitor setup is principally intended for stage monitor applications with ground-positioning. Big and acoustically hard boundary surfaces just near to the loudspeaker are causing a shift in the tonal balance in the low frequencies. This effect is considered and compensated in the monitor setup.

PRESET 4: Floor Monitor 90Hz

The monitor setup is principally intended for stage monitor applications with ground-positioning. Big and acoustically hard boundary surfaces just near to the loudspeaker are causing a shift in the tonal balance in the low frequencies. This effect is considered and compensated in the monitor setup.

### 2.2.1.7. Amplifier Module & DSP: Module Cover „S" Mounting

To protect the Control Panel from unauthorized access, a module cover can be installed. To do this, follow the instructions below:
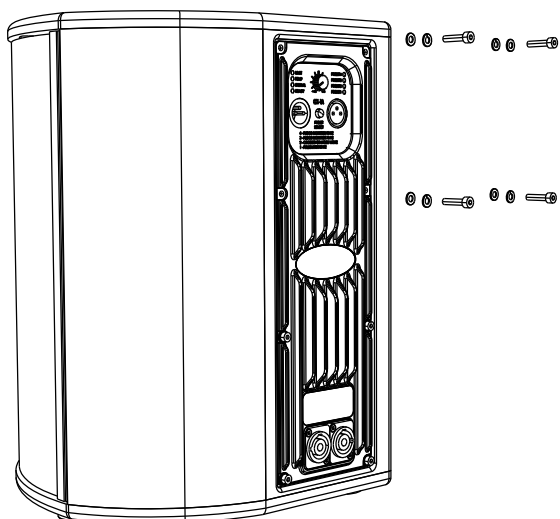
1. Remove the 4 x M4 DIN 912 screws with a ratchet or an electric screwdriver. Keep the screws and the M4 washers and M4 snap rings at a safe place. Always start removing the M4 Screws in the corners and follow an X order to unmount the other screws to avoid excessive stress in the Amplifier Module's heatsink!

	• Ratchet or electric screwdriver •HEX BIT Number 3 (Wrench Size 3mm)
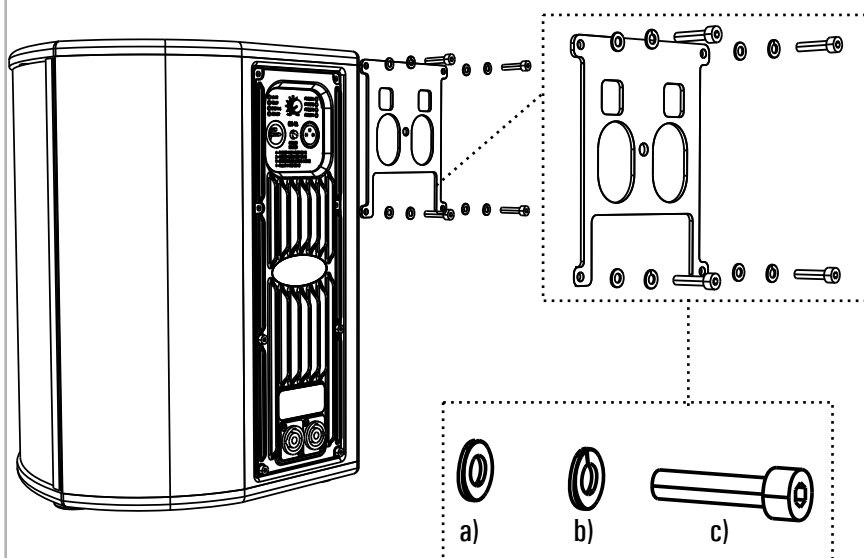
2. Put the Module Cover „S" over the Control Panel area and reinsert the removed parts from step 1. To properly install the module cover, follow the order of the parts as shown in the drawing:

a) M4 washer

b) M4 snap ring

c) M4 DIN 912 screw

a)   b)   c)
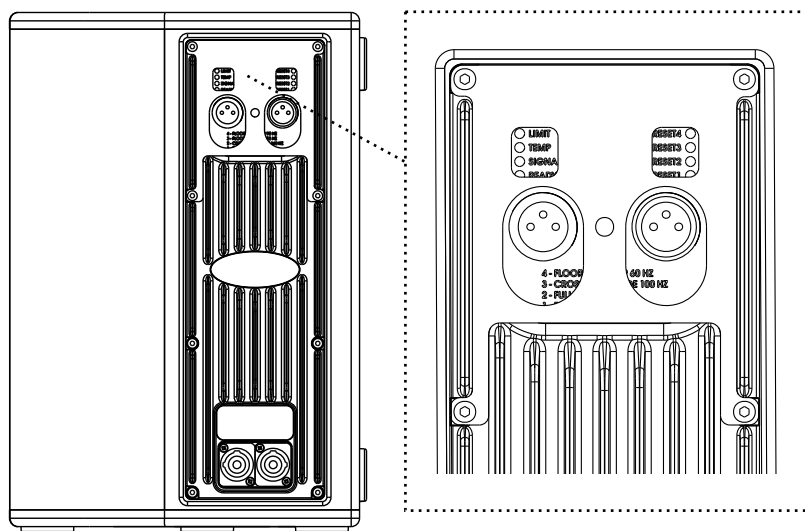
3. Fix the screws with a torque of **1,5 Nm** and follow an X order to mount them. Do not start the order with a corner screw to prevent any damage to the amplifier module.

> **Caution:** Fix the screws with a torque of **1,5 Nm**! Follow an X order to unmount/mount the screws and do not start with a corner screw! Use the screw parts in the right order to prevent any damage to the Module Cover!

2.2.2. Adjustable Speaker Flange

With the use of the built in Adjustable Speaker Flange, the speaker can be tilted down- or upwards by adjusting the angle in 4.5° steps. The maximum possible tilt angle is +/- 13,5°. To operate the Adjustable Speaker Flange with speaker stands or other stands, follow the instructions below:
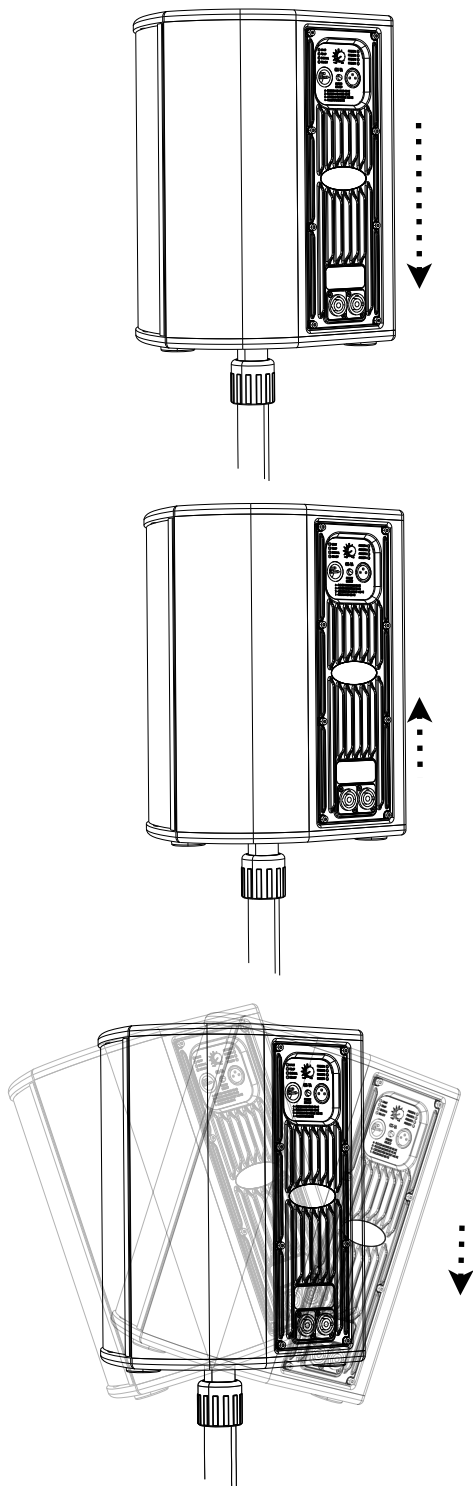
1. Put the loudspeaker over the stand and insert it into the Adjustable Speaker Flange. Make sure that the stand is fully inserted into the Adjustable Speaker Flange for safe installation.

2. Lift the loudspeaker slightly to release the locking mechanism of the Adjustable Speaker Flange tilt mechanism. Always support and secure the loudspeaker sideways and if necessary call for help from a second person.

3. Move the still slightly raised loudspeaker in the desired tilt angle position and put it down. The locking mechanism of the Adjustable Speaker Flange locks automatically and keeps the speaker safely in position.

> **Danger:** Always set the flange to 0 ° before lifting and setting up the loudspeaker! Make sure that the loudspeaker does not tilt accidently when setting up and positioning on the respective loudspeaker stand! Always make sure that the loudspeaker stand is properly set up and provides sufficient stability. When using a distance rod mounted on a subwoofer, the loudspeaker on the top of the rod should never be heavier than the subwoofer itself!

2.2.3. Second Independent Safety Link

If the loudspeaker is to be flown, the loudspeaker must be secured with a Second Independent Safety Link. This link is to be attached to the top of the CX-1A/CX-1B. To prepare the loudspeaker accordingly, follow the steps as explained below:
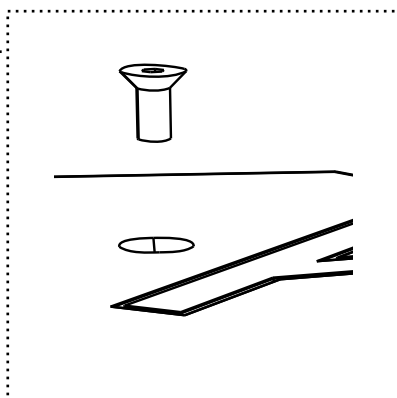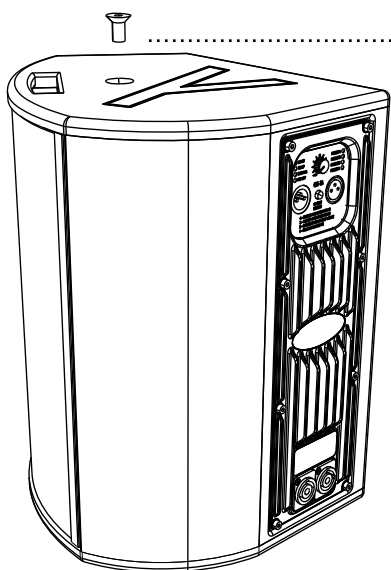
1. Remove the M10 DIN 7991 screw from the top of the loudspeaker with a ratchet or an electric screwdriver. Keep the screw at a safe place to make it possible to use again later.

> • Ratchet or electric screwdriver
> • HEX BIT Number 6 (Wrench Size 6mm)
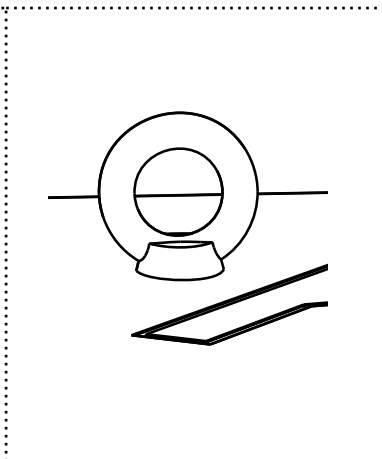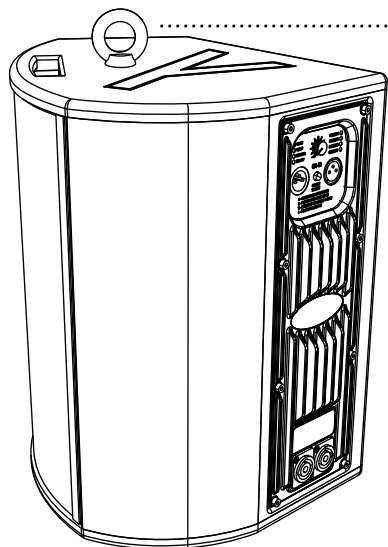
2. Insert the M10 Eye Bolt and screw it in completely. Use your manual force or a suitable screwdriver. Do not over-tighten it, as the Eye Bolt could enter the wood and damage the speaker surface.
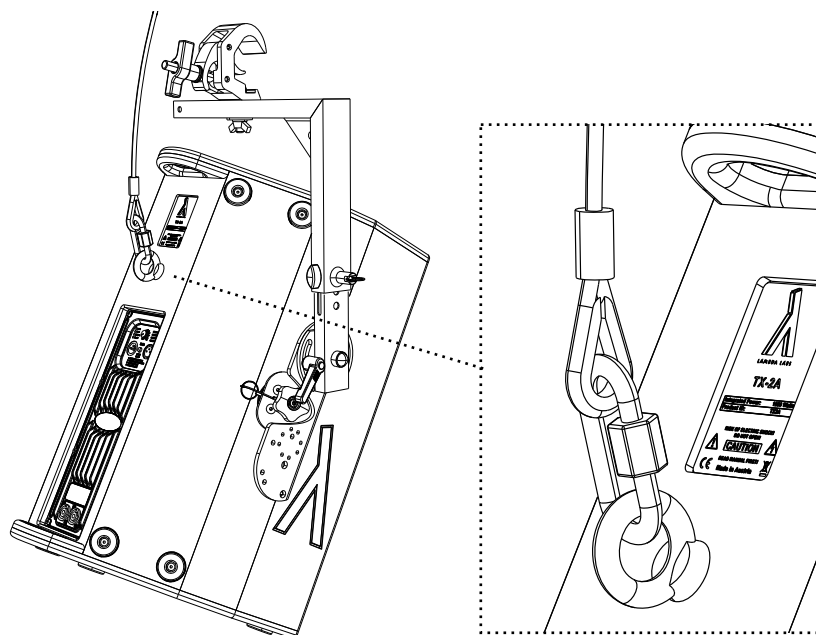
> **10 mm Eye Bolt**
>
> Size: 40 mm
> WLL: (0° load) 140kg
> SF 1:5
> DIN EN sim. 580

> **Danger:** Do NOT use the 10mm Eye Bolt as a rigging item to fly the speaker with it! Use it ONLY as a Second Independent Safety Link! When loading the 10mm Eye Bolt in an 0° angle, the **WLL** is **140kg** with a Safety Factor of **1:5**!

3. Connect the 10mm Eye Bolt with the 8mm Rapid Chain Link and the 6mm Safety Rope. The figure on the left shows the complete configuration of the Second Independent Safety Link using the example of a TX-2A enclosure rigged with a Half-Bracket.

8mm Rapid Chain Link
Size: 58 x 34 mm
WLL: 560kg
SF 1:5
DIN EN sim. 56926

6mm Safety Rope
Length: 1 m
max. 35kg
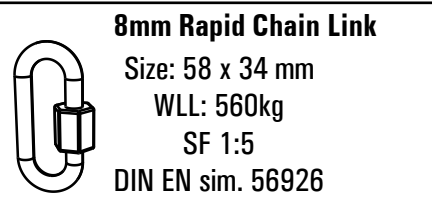
Danger: The Safety Rope must be tightened in a way that the height of fall of the object to be secured is minimized! A height of fall of **max. 0.2 m** should not be exceeded under any circumstances! Check the rigging items involved regularly!

Note: The mentioned optional rigging items described above can be purchased as a complete set (Loudspeaker Safety Set).

2.2.4. EPS & Rigging options overview

The CX-1A is equipped with 3 EPS mounting points to fly the loudspeaker with various rigging equipment. Therefore, the loudspeaker can be flown vertically, horizontally and upside down. For further instructions and detailed rigging explanations, please check the provided specific rigging manuals. The following chapters provide an overview of the rigging possibilities you have with the CX-1A.

2.2.4.1. EPS & Rigging options: T-Bracket Rigging System

The rigging component **T-Bracket** can be used for all speakers from the CX- and TX-Series. It can be combined with the with the **Vari-Clamp.** The T-Bracket is preassembled and available in 2 versions of the EPS System: M (Mobile) and I (Installation) version. The installation version provides additional tamper-proof properties to protect the components from unauthorized access.
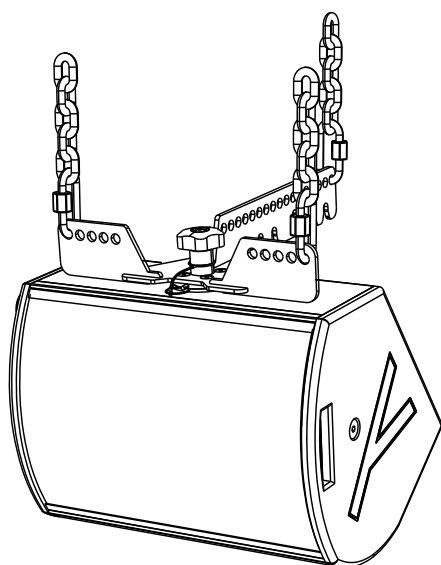
Note: The maximum possible tilt angle for the CX-1A loudspeaker in combination with the T-Bracket is **55,9°.** For further details, refer to the T-Bracket manual!
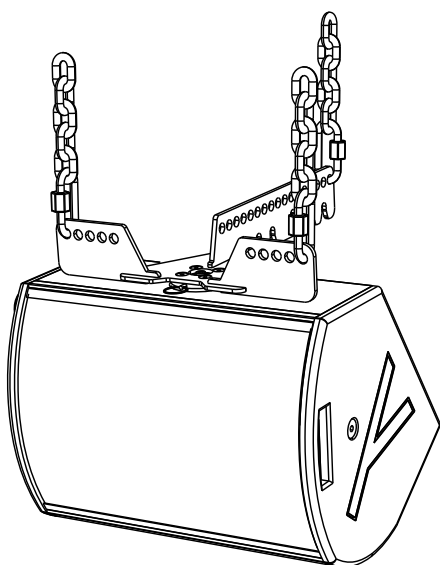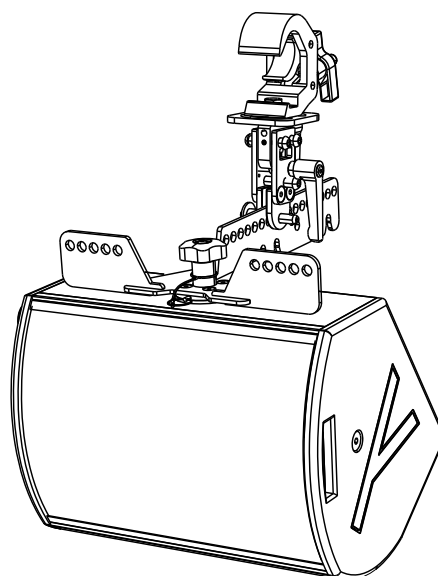
T-Bracket (M)
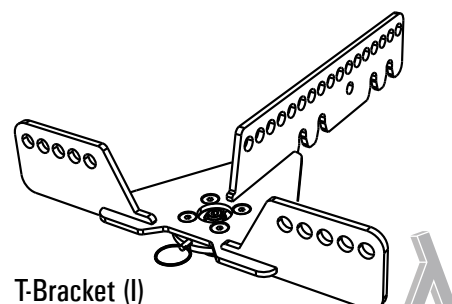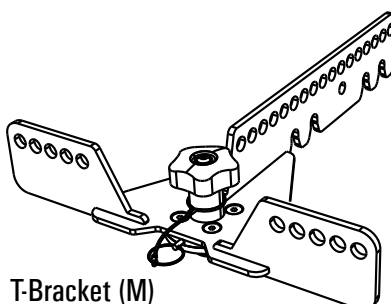
T-Bracket (I)

T-Bracket:

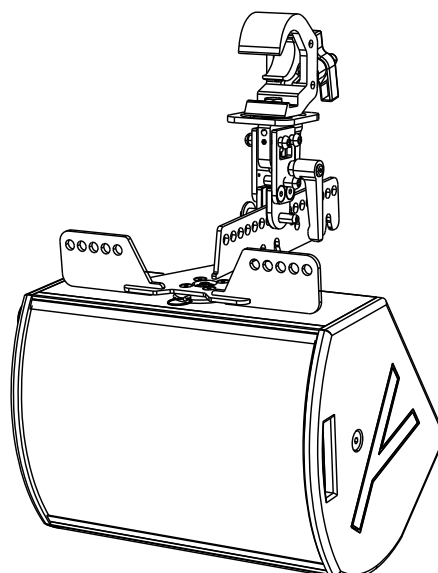### Mobile Version (M)

Installation Version (I)

T-Bracket / Vari-Clamp

Mobile Version (M)
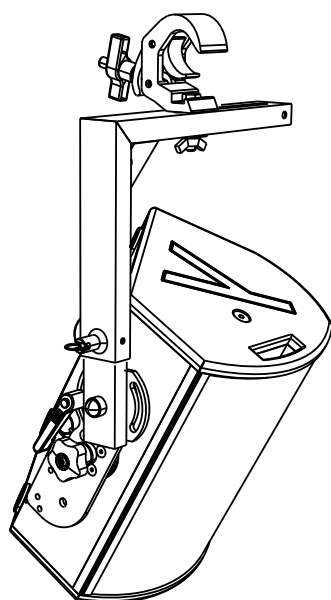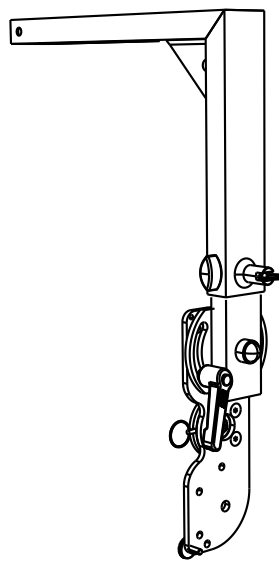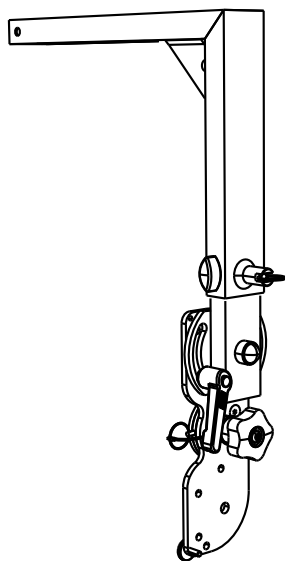

Installation Version (I)

2.2.4.2. EPS & Rigging options: Half-Bracket Rigging System CX-Series

The rigging component **Half-Bracket CX-Series** can be used with all loudspeakers from the CX-Series. It provides vertical rigging options with the additional opportunity to mount the loudspeaker upside down. To make the Half-Bracket fit to every loudspeaker of the CX-Series, its length can be adjusted. The Half-Bracket is preassembled and available in 2 versions of the EPS System: M (Mobile) and I (Installation) version. The installation version provides additional tamper-proof properties to protect the components from unauthorized access. A similar version of the Half-Bracket can be used with the loudspeakers from the TX-Series.
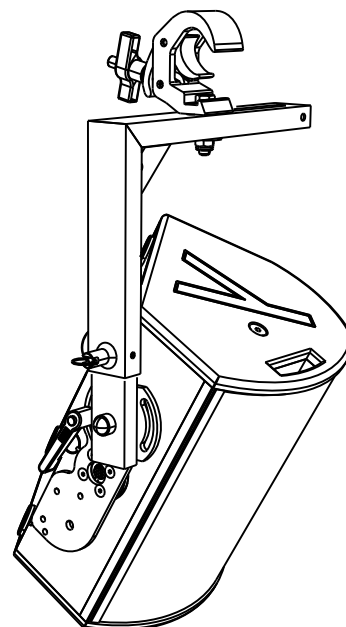
Half-Bracket CX-Series:

Mobile Version (M)

Installation Version (I)

Note: The maximum possible tilt angle for ALL CX loudspeakers in combination with the Half-Bracket is **65°** (By shifting the Fixing Lever, the maximum angle can be extended to **130°**). For further details, refer to the Half-Bracket manual!

2.2.4.3. EPS & Rigging options: I-Bracket Rigging System

The rigging component **I-Bracket** can be used with all loudspeakers from the CX- and TX-Series and is meant for fixed installation. It provides vertical, horizontal and upside down rigging options with a short **(S)** and Long **(L)** version, including wall mount possibilities. The I-Bracket is preassembled and is available in the EPS System I (Installation) version only. The installation version provides tamper-proof properties to protect the components from unauthorized access. The Half Bracket can be combined with the **Main Carrier** to extend the fixing area to ceilings for example.
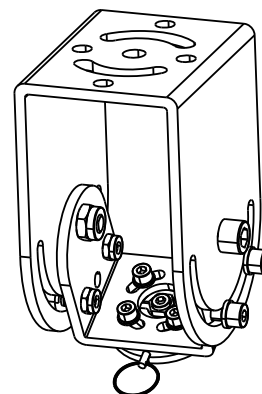
I-Bracket S
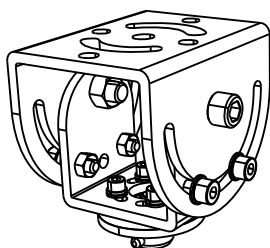
I-Bracket S: Ceiling mount

Note: The maximum possible tilt angle for the CX-1A/ CX-1B loudspeaker in combination with the **I-Bracket S** is **60°** for a ceiling installation.
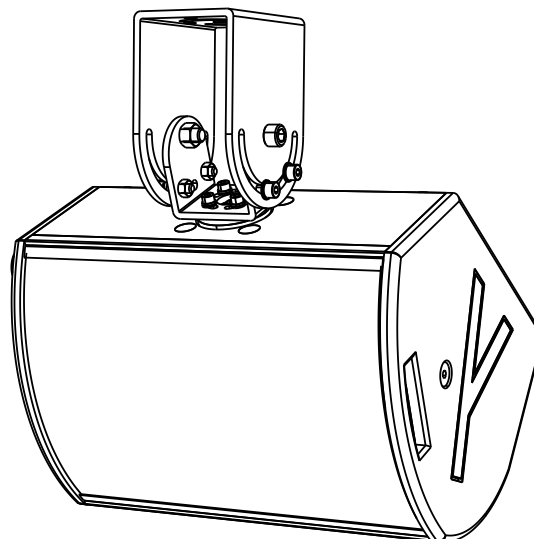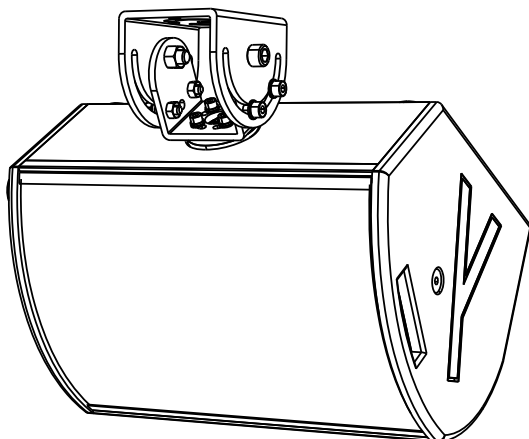
The maximum possible tilt angle for the CX-1A/CX-1B loudspeaker in combination with the **I-Bracket L** is **75°** for a ceiling installation.

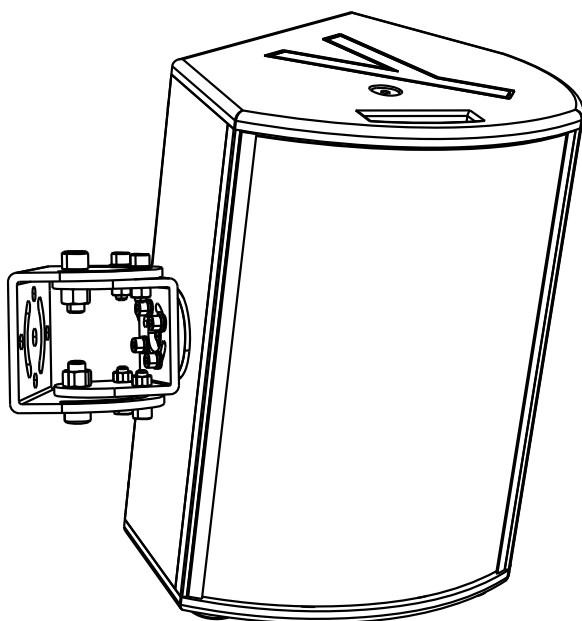For further details, refer to the I-Bracket manual!

I-Bracket L

I-Bracket L: Ceiling mount

I-Bracket S: Wall mount
(I-Bracket L not shown)

> **Note:** The maximum possible tilt angle for the CX-1A/CX-1B loudspeaker in combination with the **I-Bracket S** or **L** depends on the angle of the loudspeaker to the wall and the position of the Universal Plate. In general, the more parallel the loudspeaker is to the wall, the larger the max. tilt angle becomes.
> For further details, refer to the I-Bracket manual!
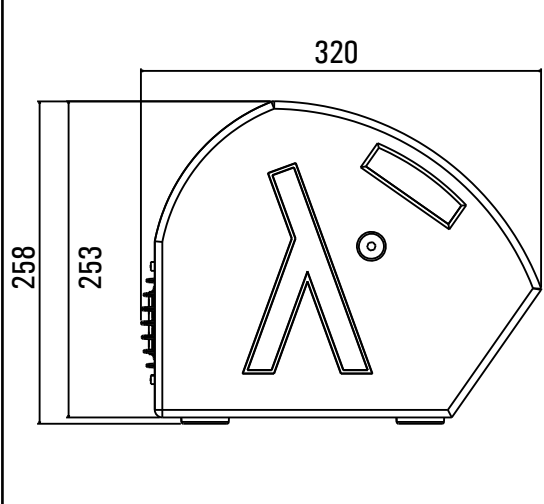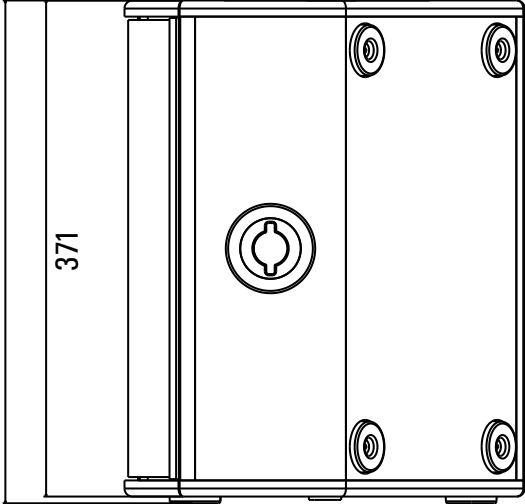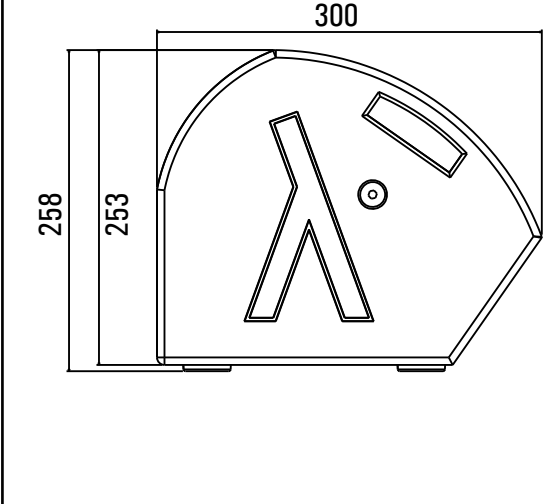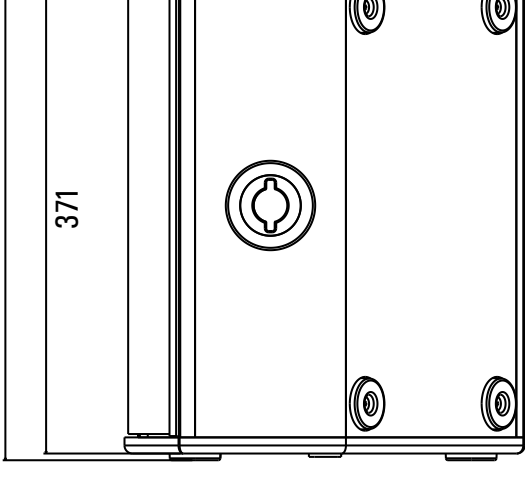
2.3. Maintenance

In order to keep the EPS rigging points in a good condition and deep black colour, follow the description below from time to time or after long and intense use. Repeat these steps more often when installed in a salty environment like sea shores:
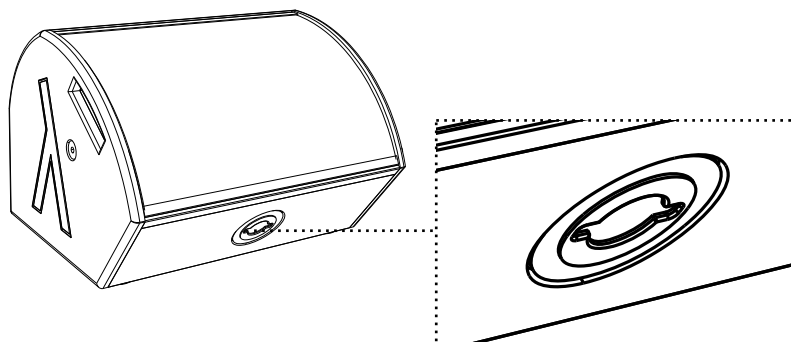
- Clean and protect the EPS rigging points with WD 40 and/or Rolimeco 1. For salty environments, Rolimeco 5. is recommended. **Do not use ANY other cleaning supplies on these areas!**

- We advice against the use of pressure water cleaning the Lambda Labs Loudspeakers and rigging parts in general! **High pressure cleaning is at your own risk!**

2.4. Dimensions

Dimensions (mm)	Weight
CX-1A 320 258 / 253 376 / 371	8,4 kg / 18,5 lbs
CX-1B 300 258 / 253 376 / 371	7,2 kg / 15,9 lbs

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